

The state of the environment of the exclusion zone Chernobyl NPP at the end of May 1986

May 30, 1986

Secret

Information on the radiation status of the environment at the Chernobyl Nuclear Power Plant as of May 30, 1986

For the period from May 23, 1986 to May 30, 1986, no significant changes in the activity of radionuclides in the local environment were observed due to the following:

1. There were no weather anomalies (rain, strong wind, etc.) capable of transporting soil and sand from fields into the reservoir, etc.;
2. Among the nuclides determining the radiation situation during this period, radionuclides with half-lives greater than 1 month predominated (cerium-141 32.5 days, ruthenium-103 39.3 days, Zr95+Nb95 65 days).

Due to radioactive decay, the activity, starting from the 30th day after the accident, will change in accordance with the data given in Table 1.

Table 1

Time	30 days	45 days	60 days	90 days	120 days	150 days
Total activity (%)	100	82	70	54	43	36

Naturally, the influence of climate and other factors can alter the data in Table 1, but in general, the main factors currently affecting soil activity, deposition on vegetation, and so on, are the primary factors. The aquatic environment is capable of self-purification, on the one hand, and of absorbing activity from the surrounding environment, on the other.

Table 2 presents data on the total water activity in the Pripjat River, the cooling pond, and the cooling pond drainage channel.

Table 2

Sampling date	Object of the study	Total activity, Bq/L
26-May-1986	River Pripjat in the town of Chernobyl	555
29-May-1986	River Pripjat in the town of Chernobyl	1,480
26-May-1986	River Pripjat at village Straholesye (near "Kiev sea")	296
28-May-1986	River Pripjat at village Novye Shepelichi	1,110
30-May-1986	River Pripjat in the town of Chernobyl	481
23-May-1986	Drainage channel at point 150	177,600
28-May-1986	Drainage channel at point 150	<185
28-May-1986	Drainage channel at point 150	1,295
29-May-1986	Drainage channel at point 43	<185

The detection limit of radioactivity in the Skazochny camp is 185 Bq/L.

Drinking water in Pripyat, Chernobyl, and the Skazochny camp does not contain artificial radionuclides.

Radioactive fallout continues to occur. According to surface measurements (May 25–27, 1986), with an exposure time of 8–9 days, fallout ranged from 74,000,000,000–370,000,000,000 Bq/km² per day [74-370 GBq/km²/day] in the Zimovishche and Krivaya Gora areas, to 18,500,000,000-74,000,000,000 Bq/km² per day [18.5-740 GBq/km²/day] in the Chernobyl area, Zorin, Bragina, and Koshevka areas. The radiation level in the Skazochny camp remains unchanged, i.e., 36–43 µSv/h on average for the camp.

From the data in Table 2 and the presence of fallout, it can be concluded that the main source of water pollution is fallout (compare the Pripyat River above and below the nuclear power plant).

Analysis of water components containing radioactivity shows that radioactivity is primarily present in lime (>95%), with dissolved radioactive substances in the water itself <5%.

Analysis of agricultural produce from settlements adjacent to the 30-km zone shows that root vegetables are edible after washing, but strawberries, sorrel, and green onions contain radioactivity that is difficult to wash off. It is advisable to refrain from consuming them.

The air in Bragina contains aerosols with an activity of 4.81 Bq/m³, in Zorin – 4.81 Bq/m³, and in Chernobyl – 13.32 Bq/m³ (May 26–28, 1986).

Acting Head of the Internal Affairs Laboratory
V.G. Permyakov